The American FERTILIZER

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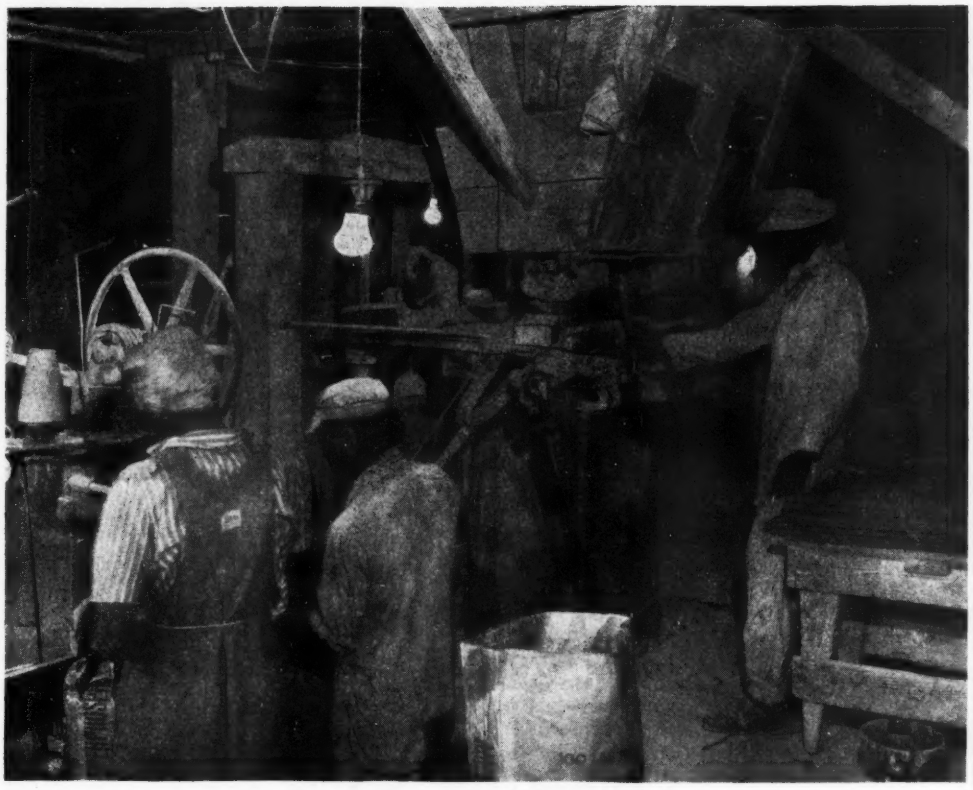

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The American FERTILIZER

Vol. 105 DECEMBER 14, 1946 No. 12

Manufacturers Ask Review of Nitrogen Export Plan

THE confusion existing in the current nitrogen situation, which was further complicated by the recent coal strike, has prompted fertilizer producers to urge the government to re-examine the present nitrogen export plan, in order that the American farmer may be assured of definite supplies of nitrogen for next spring's plantings. A group, led by Clifford A. Woodrum, president of the American Plant Food Council, conferred recently with officials of the Department of Agriculture.

According to Mr. Woodrum, the coal strike alone resulted in a loss of between 125,000 and 150,000 units of fertilizer nitrogen every day, raising the prospect of a shortage that might have serious effects on the plant food supply for the 1946–47 fertilizer year. He said that in the interests of the American farmers, as a shortage of nitrogen develops, the material earmarked for export should be cutback in the same same proportion that domestic supplies are reduced.

But aside from this, the group from the council said that the government's production estimates appear to contain discrepancies that should be corrected. Mr. Woodrum said that the estimated nitrogen production program set up last summer by the department indicated that approximately the same amount of nitrogen would be available this year for fertilizer as in the previous year, but fertilizer manufacturers report it has been their experience that nitrogen is not available in the amount that the department anticipated.

One of the matters in particular that the producers are urging be cleared up is the mechanics of the government's program of borrowing nitrogen from the private producers for export to Germany and Japan. It is reported by producers that the program is not working out as they expected and that they are being called upon to ship more for export than they anticipated.

According to information supplied the council by the Civilian Production Administration the producers are not being asked to supply more nitrogen than was estimated earlier, and that every effort is being made to avoid the disruption of normal conditions as much as possible. A review of the program, prepared by CPA, states in part as follows:

"For the fertilizer year 1945–46 the United States was allocated for export approximately 73,000 short tons of nitrogen, as ammonium nitrate principally, some ammonium sulphate and some smaller quantities of other nitrogenous materials. For the fertilizer year 1946–47 the allocation for export approximated 97,000 short tons N. This quantity was reduced to about 67,000 short tons N recently owing to losses in production of other solid forms of nitrogen fertilizer materials, with the result that this year, when in effect we will have more nitrogen available, we will have less to ship abroad.

"The increase in nitrogen is in liquid forms, which cannot be shipped to, or used by other than domestic users to any extent, and which can be used by some domestic users only partly as a substitute for solid nitrogen products and by others not at all. It should be realised that imports for 1946–47 will be about 200,000 tons N, compared

with our reduced export program of 67,000 tons.

"The Army program for providing nitrogen fertilizer materials for occupied areas will have no net effect on the quantity of nitrogen available domestically. It has disturbed the seasonal character of the fertilizer industry because, although the Army is to produce all of the nitrogen needed for their own use, the program could not be put into operation soon enough to be of value this year in foreign lands.

"Nitrogen in the form of solid ammonium nitrate has been furnished from private United States producers and Canadian imports to the Army during the last half of 1946, and in kind, ton for ton, it is to be returned by the Army during the first four months of 1947. There have been and still are obstacles to overcome, as is the condition in all activities during this reconversion period, and the coal strike may interfere, but the program is as stated above.

"There are available from domestic production and imports from Canada about 50,000 tons per month of fertilizer grade ammonium nitrate. During August, September and October 33,000 tons per month, or a total of 99,000 tons of this material, were designated as available for the Army. This quantity was proportioned on a percentage basis to domestic producers according to their capacity to produce, and to Canadian sources according to the relative size of commitments to the United States.

"Owing to the maritime strike, and time consumed in arranging contracts, this quantity of 99,000 tons was not shipped by the end of October to the extent of about 22,300 tons. It was not considered practical to levy another 33,000 tons on the November resources, and accordingly the tonnage for the Army was set at 10,700 tons in November.

"It was intended that the private sources of ammonium nitrate would still have to ship 33,000 tons, a limit set by the Department of Agriculture for any one month, and the total for the four months would be 109,700 tons. It is not expected that any additional tonnage will be needed by the Army.

"The Army program is to return these 109,700 tons during the first four months of 1947 to the parties which furnished the material on such a basis that no less or additional profit will be derived to the provate interest.

"Ammonium nitrate was selected as the material for this program because it is the material which the Army can produce and return. Also, of the solid fertilizer materials available in any quantity, ammonium nitrate contains the highest percentage of nitrogen, thereby requiring fewer bags, less handling, and less shipping space."

Mathieson and Commercial Solvents Get Army Nitrogen Plants

The Department of Justice has given clearance to the lease by War Assets Administration of the Lake Charles synthetic ammonia plant to the Mathieson Alkali Works. Department approval also has been given to the sale of the Dixie Ordnance Works to Commercial Solvents Corporation.

Leasing of the Lake Charles plant to the Hercules Powder Company was at first approved by WAA, but because of certain difficulties that company subsequently indicated that the original terms were not acceptable. The plant was then offered to Mathieson Alkali Works, who was the wartime operator, which agreed to the lease on the same terms and conditions that had applied to the proposed lease with Hercules.

The lease is for a period of ten years, with an option to purchase at any time during the first four and one-half years under the usual WAA option formula based on a fair value of $9,534,731, including not more than $1,000,000 to be spent by the government for placing facilities in condition to operate. This expenditure includes also improvements and additions for water facilities, boiler equipment, machine shop equipment, and rehabilitation and completion of existing incomplete ammonia, nitric acid, and ammonium nitrate solution units.

The principle product of the plant will be ammonium nitrate and it is expected to be turned out at the rate of 40 to 50 per cent of capacity during the first year and at 100 per cent of capacity during the succeeding five years, or somewhere in the neighborhood of 25,000 tons of nitrogen equivalent in solid form suitable for fertilizer

The Dixie Ordnance Works was sold to Commercial Solvents, its wartime operator, for $5,512,500. The plant has been shut down since VJ-Day and will cost approximately $400,000 to return to operation. It has a designed capacity of 150 tons of ammonia a day. Installation of equipment to convert the ammonium nitrate would require the expenditure of from $1,000,000 to $2,500,000.

Science Remaking the South*

By L. D. BAVER

Director, Agricultural Experiment Station, Raleigh, N. C.

PRIOR to the agricultural development of the South, the land was blanketed with trees. With the exception of a few limestone valleys, the soils had been formed from rocks that were more acid than basic in character. This fact, along with the high rainfall and forested conditions, meant that the soils would be acid. The trees protected the soil from erosion and there was a certain amount of minerals circulating each year from the roots to the leaves. Under the conditions of warm temperatures, there was little to no accumulation of organic matter and nitrogen except in wet places.

Then came the one crop system of agriculture. The soils became badly eroded. They became more acid and more deficient in bases. Cotton, corn and tobacco plus commercial fertilizers were adapted to this acid type of agriculture. In reality, the one-crop, row system of farming caused the South to lose much of its most valuable asset, the soil and its productivity.

Nitrogen was the number one limiting factor in the production of cotton and corn and, to a certain extent, with tobacco. Research showed that lime was essential to go along with certain acid-forming nitrogen fertilizers. Research also showed that lime and phosphate made it possible to grow winter legumes as cover crops to protect the soil from erosion and provide much needed organic matter and nitrogen. Borax was found to be essential to the growth of many legumes. These were the first steps in the changing of an acid type of agriculture to one in which lime-requiring crops began to appear in ever-increasing importance. With legumes have come livestock in rapidly increasing numbers.

So the South is looking ahead to develop the opportunities of agricultural diversification that have been dormant for so long. It has been awaiting the scientists of the area to unlock the secrets of soils and plants and animals that will mean agricultural progress.

The soil scientists, many of whom are among the nation's best, are finding out the answers to the problems of the nutrition of the cotton plant, the peanut, the tobacco stalk, of legumes and grasses, of small grains and corn. They are developing the factual bases for soil improvement and conservation.

The plant breeders, and there are many excellent ones in the South, have developed strains and varieties of row crops thatare resistant to disease and capable of high yields. They are breeding plants, particularly grains and grasses and legumes, that are adapted to the area.

As a result of the researches of these two groups of scientists, we find that the requirements of the area for nitrogen fertilizers have increased, as the yields of corn and small grains stepped up so that the area can look up with confidence that it can produce grain for livestock. We also find that the requirements for potash have jumped by leaps and bounds as legumes and pastures begin to add additional income to the farms of the South.

But one cannot stop with the science of crops and soils. The plant pathologist has made great strides in the control of many plant diseases. New insecticides have rendered the accomplishments of the entomologist more effective.

The agricultural engineer is adding the touch of farm mechanization, crop curing and processing, and rural lights and power to the efficiency of a diversified farming operation.

The animal breeder is producing better strains of poultry and hogs. The animal nutrition man is removing many of the hurdles in the feeding of livestock and poultry that have held animal production back.

What is the sum total of these effects? It means that the southern farmer will be producing crops and animals on acres of land not now contributing to his income. It means that he will be producing his cash crops at a much lower cost of production. It means that he will conserve and build up his soils.

Yes, science is remaking the South. The recent national research bill for agriculture is one of the most important items of legislation ever to pass the Congress of the United States. It recognizes that the future of the South is tied up in science.

*An address before the Southern Convention of the National Fertilizer Association, Atlanta, November 13, 1946.

Fertilizer Freight Rates Increased

Effective January 1, 1947, increases in rail freight rates on fertilizers, ranging from 20 to 25 per cent over those in effect June 30, 1946, have been granted by the Interstate Commerce Commission. As a 6 per cent increase in the rate on solid fertilizers went into effect on July 1, 1946, this new increase represents a 14 per cent increase over present rates on this type of fertilizer.

Certain maximum increases affecting fertilizers and fertilizer materials were provided as follows:

Fertilizers not otherwise specified, including potash: 20 per cent increase, subject to a maximum of 6 cents per 100 pounds or $1.20 a ton.

Phosphate rock: 20 per cent increase, subject to a maximum of 30 cents a ton.

Sulphur: 20 per cent increase, subject to a maximum of two cents per 100 pounds or 40 cents per net ton, subject to the proviso that differentials of water-carrier rates under rail rates as of June 30, 1946, shall be restored without reduction of the water-carrier rates, actual or as herein authorized.

Ammoniacal liquor appears to take different increases as follows: 25 per cent increase within Official Territory; 20 per cent increase within and between other territories; 22.5 per cent increase between Official and points in other territories.

Agricultural or ground limestone: (In open top cars) an increase of 15 cents a ton; (In closed equipment) 20 per cent increase, subject to a maximum of 30 cents a ton.

Raw dolomite: (In open equipment) an increase of 15 cents a ton; (In closed equipment) 20 per cent increase, subject to a maximum of 30 cents a ton.

In general, switching rates and terminal charges may be increased 25 per cent.

N. F. A. Committees

The Board of Directors of the National Fertilizer Association has elected the following District Directors to serve until the 1947 Annual Meeting:

District 3—E. N. Carvel, Valliant Fertilizer Co., Laurel, Del.; District 7—H. B. Fultz, Hector Supply Co., Miami, Fla.; District 9—M. G. Field, Meridian Fertilizer Factory, Hattiesburg, Miss.

Weller Noble, Chairman of the Board, has announced the appointment of the following committees for the fiscal year 1946–47:

Executive Committee: H. B. Baylor, F. N. Bridgers, Leon H. Davis, R. L. King, Weller Noble, H. A. Parker, John E. Powell, C. T. Prindeville, E. S. Russell.

Budget Committee: R. L. King, Chairman; E. S. Russell, C. D. Shallenberger.

Plant Food Research Committee: H. B. Siems, Chairman; H. C. Brewer, T. F. Bridgers, Bailey E. Brown, C. J. Cahill, E. N. Carvel, J. A. Chucka, Joe E. Culpepper, Leroy Donald, R. H. Engle, S. D. Gray, H. E. Hendricks, G. N. Hoffer, F. L. Holland, F. G. Keenen, David D. Long, R. H. Lush, Wallace Macfarlane, H. B. Mann, R. D. Martenet, M. E. McCollam, H. H. Tucker, Nelson T. White.

Chemical Control Committee: F. G. Keenen, Chairman; C. A. Butt, W. J. Gascoyne, F. S. Lodge, J. K. Plummer, H. B. Siems, O. I. Struve.

Membership Committee: Leon H. Davis, Chairman; T. F. Bridgers, L. E. Britton, John W. Coverdale, J. H. Epting, E. B. Helgeson, Ned Lewis, J. Rucker McCarty, C. R. Martin, C. D. Shallenberger, J. E. Totman, J. W. Whitaker.

Public Relations Committee: C. T. Prindeville, Chairman; H. B. Baylor, W. Newton Long.

Superphosphate in October

Figures of the U. S. Bureau of Census show a total production of superphosphate, figured on a basis of 18 per cent A.P.A., of 754,172 tons during October, 1946, compared with 721,475 tons in September, 1946, and 732,814 tons in October, 1945. Both normal superphosphate and base goods showed an increase over September, while concentrated showed a drop of about 1,800 tons. Shipments of all grades increased during the month, with the result that stocks on hand October 31, 1946, were smaller, except in the concentrated grade.

	Normal 18% A.P.A.	Concentrated 45% A.P.A.	Base Goods 18% A.P.A.
Production			
October, 1946.....	676,984	29,072	4,508
September, 1946...	642,002	30,844	2,363
October, 1946.....	690,120	15,806	3,179
Shipment and Used in Producing Plants			
October, 1946.....	728,357	30,141	2,097
September, 1946...	661,528	29,208	1,423
October, 1945.....	713,681	17,268	1,375
Stocks on Hand			
October 31, 1946...	537,837	47,908	10,600
September 30, 1946	579,547	48,818	8,189
October 31, 1945..	813,092	30,131	9,112

Phosphate Rock in First Half of 1946

Total mine production of phosphate rock in the United States in the first half of 1946, according to reports of producers to the Bureau of Mines, United States Department of the Interior, was 3,283,179 long tons. Phosphate rock sold or used in the first half of 1946, 3,271,100 long tons, was more than six hundred thousand tons greater than in the corresponding period of 1945; the value, $13,878,651, was over three million dollars greater. The average value of the phosphate rock sold or used increased slightly, from $4.02 in the first half of 1945, to $4.24 in the similar period of 1946, increases being reported in all classes of rock except Idaho rock and soft rock from Florida. Total stocks in producers' hands on June 30, 1946, were markedly less than at the end of the first six months of 1945.

In the first half of 1946, phosphate rock was mined in Florida, Tennessee, Idaho, and Montana, and apatite in Virginia. Florida was the leading shipper as usual, its marketed production increasing to more than three times that of its nearest competitor, Tennessee. Shipments of all classes of Florida rock increased. The average value of the soft rock shipped declined; that of the other classes increased. The total value of the shipments of each of the classes in the first six months of 1946 was greater than in the similar period of 1945. The quantity of Tennessee rock sold or used in the first half of 1946 was greater than in the corresponding period of 1945, and the value was nearly half a million dollars greater. Idaho showed a marked increase in the quantity of phosphate rock sold or used in the first six months of 1946 over the January-to-June period of 1945. The total value of the shipments increased but the average value declined slightly. Montana shipments in the first six months of 1946 were much greater than those of the corresponding period of 1945; the total value was more than double, with the average value increasing from $3.77 in the first half of 1945 to $6.40 in the January-to-June period of 1946.

SALIENT STATISTICS OF THE PHOSPHATE ROCK INDUSTRY IN THE UNITED STATES

(JANUARY-JUNE 1945 AND 1946)

	1945				1946			
	Long tons		Value at mines		Long tons		Value at mines	
	Phosphate rock	P_2O_5 content	Total	Average	Phosphate rock	P_2O_5 content	Total	Average
Production (mined)	2,773,894	889,268	(1)	(1)	3,283,179	1,066,615	(1)	(1)
Sold or used by producers:								
Florida:								
Land pebble	1,789,796	600,611	$6,652,343	$3.72	2,246,595	754,783	$8,492,876	$3.78
Soft rock	36,274	7,702	151,494	4.18	49,025	10,229	192,034	3.92
Hard rock	3,500	1,256	23,862	6.82	55,432	20,182	414,566	7.48
Total, Florida	1,829,570	609,569	6,827,699	3.73	2,351,052	785,194	9,099,476	3.87
Tennessee (2) (3)	682,670	197,125	3,183,588	4.66	726,149	210,552	3,645,846	5.02
Idaho	62,220	19,593	348,060	5.59	109,658	34,424	594,012	5.42
Montana	55,209	17,549	208,408	3.77	84,241	27,250	539,317	6.40
Virginia	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Total, United States	2,629,669	843,836	10,567,755	4.02	3,271,100	1,057,420	13,878,651	4.24
Stocks in producers' hands, June 30:								
Florida	843,000	278,000	(1)	(1)	503,000	169,000	(1)	(1)
Tennessee (2) (3) (4)	585,000	146,000	(1)	(1)	331,000	91,000	(1)	(1)
Other	8,000	2,000	(1)	(1)	19,000	6,000	(1)	(1)
Total stocks (4)	1,436,000	426,000	(1)	(1)	853,000	266,000	(1)	(1)

(1) Figures not available.
(2) Virginia included with Tennessee.
(3) Includes brown-rock matrix of sinter grade and sintered brown rock.
(4) Does not include plant stocks of washer-grade matrix.

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Vol. 105 DECEMBER 14, 1946 No. 12

Principal Articles in This Issue

National Grange Opposes Government Fertilizer Plants

The National Grange has come out in support of fertilizer production by private industry rather than by government plants, through action taken by that body at its meeting in Portland, Oregon, in November. A special committee on fertilizers had previously presented a report recommending the adoption of the above position and the approval of this report by the national body now places the Grange squarely on the side of private enterprise.

The position of the Grange, as expressed in the resolution adopted, is that the government should stay out of this field unless it is clearly demonstrated that government operation would be of advantage to the farmers. It was the first time that the Grange has gone on record on the issue and its action has been most favorably received by fertilizer industry spokesmen.

The report of the fertilizer committee adopted by the Grange reads, in part, as follows:

The Federal Government should encourage and assist in the exploration of phosphate and potash resources, and further the development of Western phosphate resources by assisting in process development, the extension of electric power lines of sufficient capacity to transmit an adequate supply of low cost electric power from Federal dams to the phosphate deposits, and assembling information pertaining to the selection of plant location. Potash and phosphate resources on the public domain should be leased to industry with preference to farmer-owned or controlled cooperatives under terms assuring efficient development and safeguarding the public interest.

Utilization of funds authorized under Public Law 733, Research and Marketing Act of 1946, for support of an integrated State-Federal research program on the production and use of fertilizer in crop production and soil improvement.

An expansion of educational work in the use of fertilizers and lime by the existing educational agencies of the State and Federal Governments. Increased use of the farm unit for both research and demonstration is recommended.

The adoption by all States of the principles of the model State Fertilizer Control Bill prepared by committees of the American Association of Fertilizer Control officials and the American Society of Agronomy.

Continued production of nitrogen fertilizers at government plants until such time as they are sold or leased with assurance of continued fertilizer production as long as needed for domestic or foreign requirements.

The occupied countries, Germany, Italy and Japan, should be permitted to expand fertilizer production until they are self-sufficient.

The traditional American policy of no tariff on fertilizer should be maintained.

Strict enforcement of anti-trust laws to prevent monopolies and to assure competition. Fertilizer resources, government plants and fertilizer materials should be equally available to all segments of the industry.

The cost of fertilizer production in both government and private plants should be determined and reported by appropriate agencies of the Federal Government.

All commercial production of fertilizers should be by private industry including farmer-owned and controlled cooperatives unless the advantage of government operation is clearly demonstrated.

No Change in Potash Allocation

In a meeting on December 3rd, the Potash Producers Industry Advisory Committee decided to reconvene January 15th to make final recommendation on the advisability of removing potash from allocation after March 31, 1947.

At this meeting the committee was divided on the question of recommending revocation of Schedule 120 to CPA's Order M-300 under which potash is allocated.

Two members recommended immediate revocation. Two other members of the Committee said they favored revocation as soon as assurance could be obtained that decontrol would be complete. If any controls were to be continued they would prefer the form of allocation provided by Schedule 120 to M-300.

Although the Second War Powers Act, under which CPA has authority to make allocations, ends March 31, 1947, it was pointed out that under the present order allocations for April and May, 1947, would be issued in February.

Under the distribution program of the International Emergency Food Council, the United States has allocations of 49,067 metric tons of potash (basis K_2O) from Germany and 27,581 metric tons from France. The committee said that there is little likelihood of the immediate importation of any of this potash, partly because of its price.

CPA said that 25,000 tons of potash allocated to Japan from United States sources under the international distribution program cannot be moved until an equivalent quantity is received from France. French imports thus would represent no net gain to United States agriculture. The French have indicated that no potash would be made available for this country until June, 1947.

TVA Fertilizer Demonstration in New Mexico

Results this year on 32 TVA fertilizer demonstration farms in 14 New Mexico counties have definitely proved the value of phosphate fertilizer on farms in this state, according to Clayborn Wayne, extension agronomist of New Mexico A. and M. College.

Seventy tons of superphosphate allotted to New Mexico in 1946 by the Tennessee Valley Authority, in cooperation with New Mexico A. and M. College, were successfully used, according to Wayne, to show the following: The value of phosphate fertilizer in increasing yields of alfalfa and other legumes, the importance of phosphate in a crop rotation system, the value of phosphate in increasing the nutritive value of feeds, and—most important of all—the increase in yield and net income from farm units using recommended farm practices.

"Demonstrators following the recommendations of the New Mexico Experiment Station and Extension Service found that 60 pounds of phosphoric acid per acre increased yields of alfalfa from one-fourth to one-third," Wayne declared. "Demonstrators claimed that cattle prefer hay that has been produced on treated fields."

The extension agronomist gave several concrete illustrations of results obtained from unit farms where phosphate fertilizer was applied.

Samuel Paiz, a TVA cooperator in Mora County, reported that on land he treated with 135 pounds of superphosphate per acre, he received 4,122 pounds of alfalfa, compared with an untreated plot that produced only 3,105 pounds. Bonifacio Romero of Socorro County, another cooperator, reported that, despite water shortages this year, his treated fields produced 40 per cent more alfalfa.

Wayne added that other demonstration farms in San Juan, Rio Arriba, Sandoval, Valencia, Colfax, and Bernalillo have all reported definite results from the application of superphosphate on alfalfa.

November Tag Sales

Fertilizer tax tag sales in November, 1946 totaled 529,000 equivalent short tons, according to reports from the State Control Officials of 16 States to the National Fertilizer Association. While the sales were 15 per cent higher than November, 1945 they were just below the record November sales in 1944 when they totaled 536,000 tons. November tag sales in the past three years have averaged about 6 per cent of the annual sales, whereas in pre-war years they were only about 2 per cent.

Tag sales in North Carolina, South Carolina, Florida, Alabama, Tennessee, Arkansas, and Louisiana were higher in November, 1946 than the preceding year, but were lower in Virginia, Georgia and Texas; Oklahoma sales were the same for both years. A sharp decline took place in the Midwest with tag sales 21 per cent below November, 1945 and 25 per cent below 1944. However, previous to 1944, November tag sales in the Midwest were negligible. Sales in Illinois and Kentucky were higher than in November, 1945 but lower in the other three States.

Sulphur Production Large

Production of sulphur during October totaled 333,041 tons, according to the U. S. Bureau of Mines, continuing the high level established for the past several months. Shipments, however, were only 257,137 tons, which increased producers' stocks on hand to the peak of 3,983,973 tons. This is equivalent to over a normal year's supply.

FERTILIZER TAX TAG SALES
Compiled by The National Fertilizer Association

State	November				January–November		
	1946 Tons	1945 Tons	1944 Tons	% of 1945	1946 Tons	1945 Tons	1944 Tons
Virginia	21,450	37,161	25,479	109	617,524	568,877	475,125
North Carolina	109,757	63,291	106,068	111	1,480,129	1,332,047	1,226,372
South Carolina	62,380	34,150	52,900	111	843,400	759,410	710,693
Georgia	34,163	58,142	51,106	100+	1,051,322	1,047,844	971,569
Florida	116,394	100,703	101,724	119	970,682	817,173	744,254
Alabama	51,200	20,350	32,000	119	817,250	685,850	620,350
Tennessee	13,605	6,388	12,699	116	318,239	273,590	260,070
Arkansas	6,800	750	11,000	130	148,350	114,150	121,583
Louisiana	13,070	10,500	8,150	110	245,788	224,010	211,445
Texas	16,830	23,343	22,910	154	330,913	215,198	193,624
Oklahoma	2,000	2,000	2,750	218	52,936	24,312	20,101
Total South	447,649	356,778	426,786	113	6,877,533	6,062,461	5,555,186
Indiana	54,313	79,591	90,707	116	565,930	488,197	430,150
Illinois	13,600	12,650	10,050	125	288,203	231,164	163,140
Kentucky	13,415	8,650	8,028	113	305,056	270,796	237,737
Missouri	185	770	85	171	252,163	147,404	135,086
Kansas	5	1,005	75	156	58,868	37,620	37,771
Total Midwest	81,518	102,666	108,945	125	1,470,220	1,175,181	1,003,884
Grand Total	529,167	459,444	535,731	115	8,347,753	7,237,642	6,559,070

FERTILIZER MATERIALS MARKET

NEW YORK

Industry Concerned by Reduced Suppliesof Sulphate of Ammonia Due to Recent Coal Strike. Modification of Government Export Plan Urged. Organic Materials Priced above Fertilizer Levels. Nitrate of Soda Situation Tight. Superphosphate Still Short. Potash Moving on Schedule.

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, December 9, 1946.

The fertilizer industry is primarily interested at this time in speculation as to the effect of the recent coal strike upon production and transportation of materials. Largest concern is felt in the increasing scarcity of ammonium sulphate due to reduced coke oven operations. Several groups of fertilizer producers have conferred recently with government officials with a view to clarifying the generally confused situation that now exists with regard to nitrogen. It is felt that continuing losses of this vital plant food as a result of the coal strike may well bring about a serious shortage of supplies for the current fertilizer year. Industry spokesmen are endeavoring to bring about a modification of current government export commitments on nitrogen, which would tend to ease the critical domestic shortage.

The demand from all fertilizer manufacturers for organics continues heavy and unfilled with sales confined to feed manufacturers at recently established high price levels. The prospect of early imports of organic materials in any quantities remains remote. Foreign sellers continue to hold to prices that are beyond reach of the fertilizer industry.

Foreign inquiry for all fertilizer materials is still heavy but, except for small lots of superphosphate, very little business is actually being done.

Sulphate of Ammonia

The outlook for a better supply position of this material is extremely dark, and loss of supplies due to the coal strike will be irreplaceable. Shipments against current contracts have practically ceased as stocks are nearly exhausted.

Nitrate of Soda

This market continues exceedingly tight and no increased supplies are expected to be made available in the near future. Foreign material is arriving at East Coast ports according to schedule, but stocks of sizable quantities cannot be maintained because of heavy demand from fertilizer mixers. The possibility of a change in price structure is not evident at this writing.

Organic Materials

Tankage and dried blood are offered infrequently at $10 per unit of ammonia ($12.15 per unit N) but even the feed trade has shown little interest at this figure. Nitrogenous tankage is being taken as soon as produced at the new higher levels. It is reported that some fertilizer manufacturers have covered a portion of their organics requirements with purchases of soybean meal.

Superphosphate

Supply continues to fall far short of meeting demand, and the inability of acidulators to obtain increased supplies of phosphate rock prevents higher production. Call for concentrated superphosphate is extremely heavy, but productive capacity restricts movement of this material to new buyers.

Phosphate Rock

The Bureau of Mines reports that 3,283,179 long tons of phosphate rock were mined during the first-half of 1946. This entire production was either sold or used during the same period. Producers stocks remain considerably under those held at this time last year. Production in the North African mines continues to expand, but all supplies from this source are still moving to European countries.

Potash

There is considerable rumor that the government allocation program may be dropped with the imminent dissolution of the Civilian Production Administration. However, production has been completely sold against current allocations and the situation would not be changed if controls were removed. Shipments to fertilizer mixers have continued on schedule in spite of transportation difficulties.

CHARLESTON

Demand for Fertilizers Greater Than Usual at This Time of Year. Car Shortage Hampers Materials Shipments.

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, December 6, 1946.

All fertilizer materials remain short of demand. Some easing in price on vegetable organics in recent weeks has been noticed. Mixed fertilizer consumers are calling for fertilizers heavier than usual for this time of the year—October tax tag sales being about 35 per cent above last year's October figures.

Organics.—South American blood and tankages remain higher than most fertilizer manufacturers are willing to pay. Domestic blood and tankages are quoted at $9.00 to $10.00 ($10.94 to $12.15 per unit N), f.o.b. Chicago. Vegetable proteins such as soy bean oil meal and cottonseed meal have been sold to fertilizer manufacturers recently at around $75.00 to 80.00 per ton bulk, f.o.b. producing point, on soy bean meal for January to March shipment; and about $80.00 bulk, f.o.b. producing point, on 36 per cent cottonseed meal for December to April movement. European organics remain practically unobtainable. Domestic nitrogenous prices are now $4.15 ($5.04 per unit N) and $6.00 ($7.30 per unit N), f.o.b. producing points, depending on the producer.

Castor Pomace.—Producers are now quoting on a flat ton basis and the price is now $35.00 to $37.00 per ton, f.o.b. producer's mill, according to the producer.

Nitrate of Soda.—Demand continues greater than supply with stronger demand as the season progresses. Shortage of basic material continues to hamper domestic production of nitrate of soda.

Sulphate of Ammonia.—Production during September bettered the August output by about 4,500 tons. Export requirements still take a considerable quantity from the domestic market.

Ammonium Nitrate.—September production is behind August production by about 4,000 tons and export shipments are taking this material from the domestic market in sizeable tonnages.

Potash.—Demand remains strong and supply is inadequate to meet all inquiries as transportation difficulties have caused irregularities in the movement. Producers are booked up through February, 1947.

Superphosphate.—Demand is heavy and supply is tight. Demand from farmers for mixed fertilizer earlier than usual for the season is reflected in a call for superphosphate by bulk buyers, and stocks are low. Continued by bulk buyers, and stocks are low. Continued shortage of railroad cars for movement of phosphate rock and inadequate supply of sulphuric acid hamper production.

Phosphate Rock.—Market is tight as demand remains firm. Shortage of railroad cars at the mines reduces deliveries to acidulators. Shortage of cars amounts to a reduction in movement of rock to domestic consumers of about 30 per cent to 35 per cent.

PHILADELPHIA

Coal Strike Halts Deliveries of Fertilizers and Materials. Nitrogen Supply To Be Short. Organics Prices Eased.

Exclusive Correspondence to "The American Fertilizer"

PHILADELPHIA, December 7, 1946.

Anything in the way of a market today is purely nominal, except where deliveries can be handled by trucks—owned by either the buyer or seller. The coal strike has all markets demoralized, but even before the strike the demand for all fertilizer materials was greater than the supply. The demand is for mixed goods as well as raw materials and is heavier than usual for this season of the year.

It is quite apparent that the nitrogen supply will be short of requirements this coming

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season, and is very likely to be less than last year.

The superphosphate position is very tight and there are complaints that the supply of raw rock is insufficient.

Potash along with the other materials is in very poor position because of the strike.

Organics have eased a little in price, with offerings limited. The demand is strong, but shipping is practically impossible.

CHICAGO

No Improvement in Fertilizer Organics Supply. Demand for Feed Materials Continues.

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, December 7, 1946.

The organic market shows no indication of improvement. Demand, regardless of time of shipment, and without undue consideration of prices, is active, while supply lags. Labor and freight embargo are causing producers much concern.

Fairly good demand is in the meat protein feed market and prices remain unchanged, to a shade lower.

International to Build New Southern Plants

International Minerals and Chemical Corporation had completed negotiations for the purchase of ten acres of industrial property in Pensacola, Florida, upon which it expects to begin construction shortly of a fetrilizer plant.

For the past 12 years the company has been using leased facilities from the Louisville and Nashville Railroad Company in which it has been conducting its manufacturing operations. The new plant is being constructed to provide for more efficient operations and greater output with which to take care of the increased business being experienced in that region by the corporation.

The new building will be 180 feet wide by 210 feet long and is expected to be completed by June, 1947. It will be capable of producing 20,000 tons of mixed fertilizer annually.

Construction has also started on a new sulphuric acid plant as an addition to its present commercial fertilizer plant at Spartanburg, S. C. According to Louis Ware, president, the new addition is expected to be ready for operation by June, 1947.

The new plant will enable the company to furnish all the necessary raw materials that it uses in the manufacture of its superphos-

phate at Spartanburg. At present, its manufacturing facilities in Spartanburg include an acidulating plant and a mixing plant. When operating at full capacity, the new plant addition is expected to produce about 20,000 tons of sulphuric acid annually.

North Louisiana Corn and Cotton Fertilizers

From the Annual Report of the Louisiana Experiment Station, this statement is taken.

"The results of experiments and field experience at the North Louisiana Experiment show clearly that proper fertilization of corn is essential if the crop is to be grown economically in the hill areas of North Louisiana. Yields ranging between 10 and 20 bushels per acre are produced where no fertilizer or inadequate fertilizer is used. Corn properly fertilized and cultivated produce 30 to 40, and often as much as 60 bushels per acre. The production of corn has been increased 20 to 30 bushels per acre with the use of $8 to $10 worth of fertilizer per acre.

"Cooperative corn fertilizer demonstrations, based on the recommendation of 375 pounds per acre of an 8–8–8 fertilizer before planting and a side dressing with 100 pounds per acre of a 16 per cent nitrogen material, were conducted on a large number of farms by the county agents of the Agricultural Extension Service in North Louisiana, and the following summary is reported by R. A. Wasson, extension agronomist.

"The purpose of these demonstrations was to show the advantages of using recommended fertilizer materials as to grade and quantity over fertilizer practices commonly used on farms for corn.

Total number of demonstrations 108
Average yield all demonstrations . . . . . 48.1 bu. per acre
Average yield all checks . . . 32.5 bu. per acre
Average increase all demonstrations . . . . . 15.6 bu. per acre
Per cent increase over checks all demonstrations 48

"Conclusions:

"1. A high grade complete fertilizer under cover, as a starter, gives profitable increases in yields.

"2. It not only pays to fertilize corn, but it is much more profitable to use the right grade and quantity.

"3. In a normal growing season there is not an important difference in yields on hill, bluff

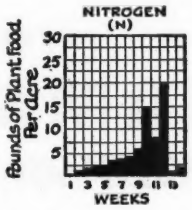
See page 25

Potatoes get hungry late in life...

IT ISN'T until late in the growing season that potatoes take up most of their plant food. But then they really go to town.

In tests run at the Virginia Truck Experiment Station, potatoes required less nitrogen during the first half of their growing season—and took up only 9 per cent of their total plant food.

But, during the 10th, 11th and 12th weeks—only 3 weeks out of their 14-week growing period—they absorbed 69% of the total nitrogen.



That's why potatoes need a fertilizer whose nitrogen resists leaching for over two months and then is readily available in large quantities—for potatoes get hungry late in life.

Your fertilizer fits the crop when you use Urea Nitrogen

Urea nitrogen has a way of saving itself for the time when crops need it most—late in the growing season. This is due to chemical changes in the soil that make Urea Nitrogen resistant to leaching yet readily available to the plants.

Du Pont UREA-AMMONIA LIQUORS provide an excellent, low-cost source of urea-nitrogen for making mixtures that store well, drill well, and have low acid reaction.

To meet the varying requirements of manufacturers, Du Pont supplies four UREA-AMMONIA LIQUORS and URAMON Fertilizer Compound. For further information, write E. I. du Pont de Nemours & Co. (Inc.), Ammonia Department, Wilmington 98, Delaware.

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and alluvial soils if sufficient plant food is provided.

"4. It requires about two pounds of available nitrogen under average farm conditions for each bushel increase in yield.

"5. The state average yield of corn can be materially increased by proper fertilization.

Cotton Fertilizers

"Cooperative cotton fertilizer demonstrations based on the recommendation of 500 pounds per acre of an 8–8–8 mixture before planting were conducted on a large number of farms by the county agents of the Agricultural Extension Service in North Louisiana, and the following summary is reported by R. A. Wasson, extension agronomist:

"The purpose of these demonstrations was to show the advantages of using recommended fertilizer materials as to grade and quantity over fertilizer practices commonly used on farms for cotton.

Total number of demonstrations	83
Average yield seed cotton all demonstrations	1,248 lbs. per acre
Average yield all checks	829 lbs. per acre
Average increase all demonstrations	419 lbs. per acre
Per cent increase over checks	50.5

"Conclusions:

"1. Cotton yields can be increased up to 60 per cent, even in an unfavorable season, by using the right grade and quantity of fertilizer.

"2. Where ample plant food is provided, there is no essential difference in yields on hill, terrace and alluvial soils."

St. Regis Officers Elected

Roy K. Ferguson, president of the St. Regis Paper Company, has announced the election of seven new officers of the St. Regis Sales Corporation, the company's subsidiary.

They are: Mason F. Ford, Executive Vice President and South American Manager; Thomas H. Cosford, Executive Vice President and Canadian Manager; Reginald L. Vayo, Executive Vice President and Director of Sales of Kraft Pulp; William H. Anders, Executive Vice President and Manager of the Nashua River Division; Edgar Hoppe, Vice President and European Manager; Burton A. Ford, Vice President, Multiwall Bag Division; and C. A. Brothman, Comptroller.

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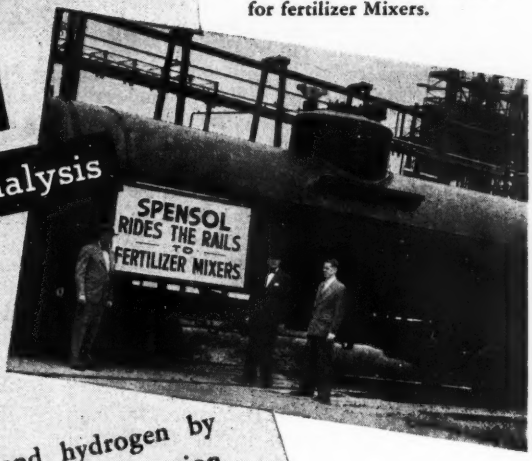

New SPENSOL is now available to the fertilizer industry with "ahead of schedule" service and supply.

Nitrogen, the essential plant food, combined with oxygen and hydrogen by Spencer's "know-how" in giving special attention to accuracy and detail in manufacture . . . results in SPENSOL, the new, outstanding quality solutions for fertilizer mixers.

COMPOSITION OF SPENSOL A (SPENCER NITROGEN SOLUTIONS)

	Ammonium Nitrate %	Anhydrous Ammonia %	Total Nitrogen %	Approx. Sp. Grav. at 60° F.
SPECIFICATIONS	65.0	21.7	40.6	1.142
ACTUAL ANALYSIS*	64.99	21.8	40.68	1.142

* Analysis certified by Bruce Williams' Laboratories, Joplin, Missouri

Spencer Chemical COMPANY

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Obituaries

Jesse L. Devilbiss

Jesse L. Devilbiss, vice president in charge of sales for the United States Potash Company, died from a heart attack in New York on November 29th. He was 59 years old.

Mr. Devilbiss spent his entire business career in the fertilizer industry. He was for many years connected with the Virginia-Carolina Chemical Corporation, as division manager and later as general sales manager. In 1932, he joined the United States Potash Company as sales manager and was elected vice president in 1939.

Mr. Devilbiss was a regular attendant at industry meetings and leaves a large circle of friends who are saddened by his untimely death.

Gustavus Ober, Jr.

Gustavus Ober, Jr., of Baltimore, for many years one of the leaders in the fertilizer industry, died on November 19th. He was formerly president of G. Ober and Sons Company, fertilizer manufacturers, until the merger of that company with the Davison Chemical Corporation. At the time of his death, he was vice president of the Fidelity and Deposit Company of Maryland.

Mr. Ober served as president of the National Fertilizer Association from 1922 to 1924 and was a member of the Board of Directors for a number of years. He was a regular attendant at industry meetings and his passing is regretted by a wide circle of friends throughout the fertilizer trade.

A. V. Foote

Alfred Vance Foote, of J. B. Sedberry Company, fertilizer machinery manufacturers, died recently at Chicago, at the age of 79 years. Mr. Foote was a native of Raleigh, N. C., and after completing his education in Louisville, Ky., spent several years as manager of a large Mississippi cotton plantation. He served as auditor for the Norfolk and Western Railroad and later organized the Williams Mill Company at Ronda, N. C. In 1925 he joined the Sedberry organization as manager of their Chicago office.

Earl H. Lamiell

Earl H. Lamiell, representative of J. B. Sedberry Company, died at Shelby, Ohio, on October 7th, at the age of 64. Born in Canton, Ohio, Mr. Lamiell had for many years been in business in Greenwich. He was a member of the Greenwich Methodist Church and the Greenwich Rotary Club. He was a J. B. Sedberry representative for nearly 20 years.

Mr. Lamiell is survived by his wife, Grace; a son, D. E. Lamiell, of Cleveland; a daughter, Mrs. D. E. Williams, of Willard; three stepsons, Jack McKinnon, of Mansfield; Joe McKinnon, of Bucyrus, and Max McKinnon, of Zanesville, and two grandchildren.

Nitrate Doubles Corn Yield in Texas

Homer Layne, McLennan County, Texas, has exploded the theory that commercial fertilizer will not improve crop yields on the black, waxy prairie soils of Central Texas.

For years folks around McLennan County have been saying that the application of fertilizers in that section is just so much wasted time, money and effort, reports County Agricultural Agent J. C. Patterson. But last spring, when his corn was up about knee high, Layne applied a side-dressing of 200 pounds of nitrate of soda on each acre. Results he doubled his corn yield.

See Page 20

Corn in the Speegleville area produced 20 bushels to the acre, while Layne's side-dressed plot produced 40 bushels. Corn on the Layne farm which was not fertilized also yielded only 20 bushels.

Salem Fertilizer Proves Lifesaver for Oregon Crops

Close to 10,000 tons of ammonium sulphate fertilizer have been distributed to Oregon purchasers from the government alumina plant at Salem, proving a lifesaver to Oregon agriculture this year, according to reports to a special meeting of interested growers and dealers in Salem recently.

Committees of the Oregon Feed and Seed Dealers Association and the Oregon Seed Growers League reported that this plant was virtually the only source of nitrogen fertilizer this year for cover crops, vegetables and grass seed, where its use is essential. The committees requested the O. S. C. Extension service to continue to distribute this fertilizer during the nitrogen emergency.

To satisfy legal requirements the Extension service was designated last fall as the prime purchaser with responsibility for sacking the fertilizer and keeping it moving away from the plant. It in turn arranged with the Woodburn Feed and Seed Company to carry out the actual mechanics of bagging and distribution.

The Salem plant, operated by the RFC, was given permission to produce its own ammonium sulphate needed in the alumina process and to make excess production available for agricultural use. Support of the Oregon congressional delegation, headed by Senator Guy Cordon, was primarily responsible for the successful arrangement, Extension officials say. Several extensions of time have been granted, the latest to December 31st. Dealers and extension men say longer operation may be highly desirable.

Of the total produced for agriculture so far, 9,700 tons have gone to Oregon points, with about 5,000 tons being used this year on a variety of higher priced crops where A. S. King, extension soils specialist, estimates the fertilizer increased returns to farmers by some four million dollars.

Distribution has also been extended to Washington which received 2,870 tons, and Idaho where 1,900 tons have been shipped.

"Without this fertilizer it would have been impossible for many processing plants to handle their normal acreage of many crops," said King. "Experience has shown that unless fertilizer is available in liberal quantities, some crops had better be left unplanted."

Pacific Islands Again Ship Phosphates

The British Phosphate Commission has announced that shipments of phosphate rock from Nauru and Ocean Islands had been resumed on August 31st. Two shiploads were loading for Australia and another for New Zealand. During the war, the mining and loading equipment was badly damaged by bombing and it was not expected that production could be started before 1947. Pre-war shipments were around 500,000 tons per year.

Using 200 pounds per acre of 20 per cent superphosphate at fall planting and 100 pounds of ammonium nitrate as a top dressing in early spring, Jim Edmondson, of Maysville, Ark., harvested a crop of winter oats averaging 92½ bushels per acre. He thus refuted the formerly accepted practice of planting only spring oats in that section of the country.

Potash Deliveries Break Records in 1945-1946

Another record was made by the American Potash Industry during the fiscal year, June, 1945 through May, 1946, when a total of 908,967 tons K_2O were delivered for domestic and foreign use. This was 52,549 tons K_2O or 6 per cent more than the corresponding period in 1944–45. In announcing these figures, the American Potash Institute stated that these deliveries by the five leading potash producers were made to 42 states, the District of Columbia, Puerto Rico, Hawaii, Canada, Cuba, and a few other foreign countries, principally in South America.

Deliveries for agricultural purposes in the Continental United States totaled 741,855 tons K_2O, 7 per cent more than last year. Canada received 45,521 tons K_2O, an increase of 4 per cent; Hawaii 12,092 tons, an increase of 27 per cent; Cuba 3,372 tons, and Puerto Rico 18,642 tons, each about the same as last year.

Georgia was the leading state for deliveries, taking 69,196 tons K_2O, followed in order by Ohio, Illinois, Virginia, and Florida each taking over 60,000 tons K_2O. Illinois continued its rapid rise as an important taker of potash, although delivery does not necessarily correspond to consumption in a given state.

The 60 per cent muriate was by far the principal grade, comprising 82 per cent of the agricultural potash delivered. The sulphates including sulphate of potash and sulphate of potash magnesia made up 8 per cent of deliveries, the 50 per cent muriate 7 per cent, and manure salts 3 per cent. The tonnage of the latter was only a little more than half that of the preceding year, indicating the continued trend to the more concentrated grades.

Deliveries of potash for chemical use amounted to 74,436 tons K_2O, a drop of 15 per cent from 1944–45. The 60 per cent muriate made up 97 per cent of chemical deliveries with the remainder in the sulphate form.

DELIVERIES OF AGRICULTURAL POTASH SALTS OF AMERICAN ORIGIN, JUNE, 1945–MAY, 1946

Point of Delivery	Total Tons K_2O
Alabama	27,914.05
Arkansas	8,548.61
California	11,854.00
Colorado	282.85
Connecticut	4,986.90
Delaware	4,037.90
District of Columbia	99.49
Florida	60,075.22
Georgia	69,195.91
Idaho	361.62
Illinois	61,789.50
Indiana	39,082.35
Iowa	1,850.35
Kansas	24.35
Kentucky	7,805.57
Louisiana	15,436.46
Maine	14,995.45
Maryland	47,062.28
Massachusetts	13,302.79
Michigan	12,213.07
Minnesota	3,239.20
Mississippi	12,379.26
Missouri	2,496.00
Montana	27.30
New Hampshire	24.05
New Jersey	31,744.04
New Mexico	2.50
New York	14,026.88
North Carolina	52,271.30
North Dakota	385.05
Ohio	62,012.48
Oregon	1,513.17
Pennsylvania	16,031.73
Rhode Island	111.00
South Carolina	43,236.21
Tennessee	23,270.57
Texas	4,923.55
Utah	41.00
Vermont	406.75
Virginia	61,085.60
Washington	2,952.30
West Virginia	126.84
Wisconsin	8,629.67
Total, U. S.	741,855.17
Canada	45,521.18
Cuba	3,371.70
Puerto Rico	18,641.57
Hawaii	12,092.00
Total Institute Territory	821,481.62
Exports	13,049.41
Grand Total	834,531.03

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DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.
Spencer Chemical Co., Kansas City, Mo.

AMMONIUM NITRATE
Spencer Chemical Co., Kansas City, Mo.

BAG MANUFACTURERS—Burlap
Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Mente & Co., Inc., New Orleans, La.
Virginia-Carolina Chemical Corp., Richmond, Va.

BAG MANUFACTURERS—Cotton
Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Mente & Co., Inc., New Orleans, La.
Virginia-Carolina Chemical Corp., Richmond, Va

BAG MANUFACTURERS—Paper
Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Hammond Bag & Paper Co., Welisburg, W. Va.
Jaite Company, The, Jaite, Ohio
Raymond Bag Co., Middletown, Ohio.
St. Regis Paper Co., New York City.

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Ashcraft-Wilkinson Co., Atlanta, Ga.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.

BAG CLOSING MACHINES
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Schmutz Mfg. Co., Louisville, Ky.

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American Agricultural Chemical Co., New York City.
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Scar-Lipman & Co., Inc., New York City.
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DuPont de Nemours & Co., E. I., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Virginia-Carolina Chemical Corp., Richmond, Va.

CHEMISTS AND ASSAYERS
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COTTONSEED PRODUCTS
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

CYANAMID
American Agricultural Chemical Co., New York City.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Scar-Lipman & Co., Inc., New York City.

DRYERS
Sackett & Sons Co., The A. J., Baltimore, Md.

ENGINEERS—Chemical and Industrial
Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Titlestad Corporation, Nicolay, New York City.

FERTILIZER (Mixed) MANUFACTURERS
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
International Minerals and Chemical Corporation, Chicago, Ill.
Virginia-Carolina Chemical Corp., Richmond, Va.

FISH SCRAP AND OIL
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.

FOUNDERS AND MACHINISTS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

A Classified Index to Advertisers in "The American Fertilizer"

BUYERS' GUIDE

For an Alphabetical List of all the Advertisers, see page 33

HOPPERS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

IMPORTERS, EXPORTERS
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Scar-Lipman & Co., Inc., New York City.

INSECTICIDES
American Agricultural Chemical Co., New York City.
McLaughlin GormleyKing Co., Minneapolis, Minn.

LIMESTONE
American Agricultural Chemical Co., New York City.
American Limestone Co., Knoxville, Tenn.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.

LOADERS—Car and Wagon
Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Acid Making and Handling
Chemical Construction Corp., New York City.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Ammoniating
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Elevating and Conveying
Hough Co., The Frank G., Libertyville, Ill.
Hayward Company, The, New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Grinding and Pulverizing
Bradley Pulverizer Co., Allentown, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Sedberry, Inc. J. B., Franklin, Tenn. and Utica, N. Y.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Material Handling
Hayward Company, The, New York City.
Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Mixing, Screening and Bagging
Exact Weight Scale Co., Columbus, Ohio
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Power Transmission
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Superphosphate Manufacturing
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MANGANESE SULPHATE
McIver & Son, Alex. M., Charleston, S. C.
Tennessee Corporation, Atlanta, Ga.

MIXERS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind
Utility Works, The, East Point, Ga.

NITRATE OF SODA
American Agricultural Chemical Co., New York City
Armour Fertilizer Works, Atlanta, Ga
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City
Bradley & Baker, New York City.

NITRATE OF SODA—Continued
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

NITROGENOUS ORGANIC MATERIAL
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.

NOZZLES—Spray
Monarch Mfg. Works, Philadelphia, Pa.

PHOSPHATE ROCK
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Ruhm, H. D., Mount Pleasant, Tenn.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.
Virginia-Carolina Chemical Corp., Richmond, Va.

PLANT CONSTRUCTION—Fertilizer and Acid
Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Titlestad Corporation, Nicolay, New York City.
Utility Works, The, East Point, Ga.

POTASH SALTS—Dealers and Brokers
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

POTASH SALTS—Manufacturers
American Potash and Chem. Corp., New York City.
Potash Co. of America, New York City.
International Minerals & Chemical Corp., Chicago, Ill.
United States Potash Co., New York City.

PRINTING PRESSES—Bag
Schmutz Mfg. Co., Louisville, Ky.

PYRITES—Brokers
Ashcraft-Wilkinson Co., Atlanta, Ga.

REPAIR PARTS AND CASTINGS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

ROUGH AMMONIATES
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

SCALES—Including Automatic Bagging
Exact Weight Scale Co., Columbus, Ohio
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

BUYERS' GUIDE

SCREENS
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

SEPARATORS—Air
Sackett & Sons Co., The A. J., Baltimore, Md.

SPRAYS—Acid Chambers
Monarch Mfg. Works, Inc., Philadelphia, Pa.

SULPHATE OF AMMONIA
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Asncraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Hydrocarbon Products Co., New York City.
McIver & Son, Alex. M., Charleston, S. C
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

SULPHUR
Ashcraft-Wilkinson Co., Atlanta, Ga.
Texas Gulf Sulphur Co., New York City.

SULPHURIC ACID
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

SUPERPHOSPHATE
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Davison Chemical Corporation, Baltimore, Md.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

SUPERPHOSPHATE—Concentrated
Armour Fertilizer Works, Atlanta, Ga.
International Minerals & Chemical Corporation, Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

TANKAGE
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmaltz, Jos. H., Chicago, Ill.

UREA
DuPont de Nemours & Co., E. I., Wilmington, Del.

UREA-AMMONIA LIQUOR
DuPont de Nemours & Co., E. I., Wilmington, Del.

VALVES
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Utility Works, The, East Point, Ga.

Alphabetical List of Advertisers

PCA's RED INDIAN

makes heap big hustle

The farmer is aware of the potash need of his soil, as never before.

That speaks well for the future of your business and ours though it creates its immediate problems.

To meet these problems PCA is making "heap big hustle" in every possible way. We'd like to ship you every ton of high grade Muriate you'd like to have, but you know the complications as well as we do. Please be assured, however, that this company is doing its utmost to render the best possible service to you today...*that is always PCA's objective.*

P.C.A.
"The SALT of the EARTH"
RED MURIATE

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SOUTHERN SALES OFFICE . . Candler Building Atlanta, Ga.

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SULPHATE OF POTASH-MAGNESIA

You can get quick-acting, water-soluble magnesia in the most practical and economical way by using Sul-Po-Mag in your fertilizer mixtures or for direct application. This natural combination of vital plant foods is being produced by International in increasing quantities in the effort to keep pace with the rapidly growing demand for use on a wide variety of crops. Sul-Po-Mag is produced in the form of dry, free-flowing crystals in a mechanical condition that assures easy, time-saving handling from car or storage.

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MINERALS & CHEMICAL CORPORATION

General Offices: 20 NORTH WACKER DRIVE • CHICAGO 6

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